

KLN's notes for discussion
w/ Utah DOH on 5/13/83

1. Describe boiler

dimensions

superheater, reheater

windboxes

burners

2. Existing NO_x Controls

a. br is designed to reduce burner zone heat release rate + lower flame temperatures

b. Dual Register Burner

- fuel rich inner flame

- fuel lean outer flame

- maintains oxidizing atmosphere near furnace walls to minimize slag + wastage

3. Windbox

a. Compartmentized by pulverizer + burner row

b. air flow is measured + controlled in each compartment

4. Combustion Control System

a. Controls air + fuel flow

b. transmits boiler demand to the feeders, PA fans +

F. D. fans, in parallel

c. maintains air/fuel ratio to minimize NO_x

5. Overfire air ports

a. describe physical changes

1. small burners
2. longer soot blowers
3. access platforms
4. overfire air ducts + dampers + support steel
5. add air foils to all windbox compartments
6. overfire air ports
7. Controls
8. boiler structure

b. NO_x reduction possibly to .45 lb/10⁶ BTU

c. Cost: \$527,400,000 for 2 units

d. Schedule: 14 month unit 1 delay
2 month unit 2 delay } same time
difficult to support

e. Ramifications:

1. Lower combustion efficiency

• increased CO emissions

• ~~60,000~~ tons coal/yr more fuel

• more of other pollutants as a result of more fuel burned

500

?

6. Flue Gas Recirculation

a. describe physical changes

1. gas recirc fans + motors (15% recirc)

2. dust collectors

3. modify economizer loppers

4. duct work w/ dampers

5. controls

6. Complete redesign of convection pass

7. larger FD + ID fans due to pressure drop

8. major redesign of structural steel

9. relocate ppg, electrical, equip, HVAC etc

b. NO_x reduction possibly to .47 lb/10⁶ BTU

c. Cost: \$1,163,800,000

d. Schedule: Unit 1 delay 2 yrs
Unit 2 delay 1 yr } same time

e. Ramifications

1. higher gas velocities resulting in tube erosion

2. gas recirc fans are unreliable (heat, erosion)

3. major boiler + unit surgery !!!

4. higher auxiliary loads due to fans

5. lower availability

6. 15% reduction in boiler output: load limited

7. Reduced Combustion Air Temperature

a. describe physical changes

* 1. remove air heater baskets

b. NO_x reduction: 0 reduction

c. Cost: \$926,600,000

d. Schedule:

* 2. modify baghouse (larger gas volume)

3. larger ID fans

e. Ramifications:

1. air heater exit increase from 280 to 390°F

2. 3% drop in combustion efficiency

3. more fuel, waste + pollution

4. based on 1970 paper w/ gas fired boiler
w/o NO_x control = 20% NO_x reduction

5. IPP already has low NO_x burners, requires
higher temps for stable combustion + probably
would not benefit from this change.

BOILER "SIZE" RELATIONSHIPS

Prepared

RLN

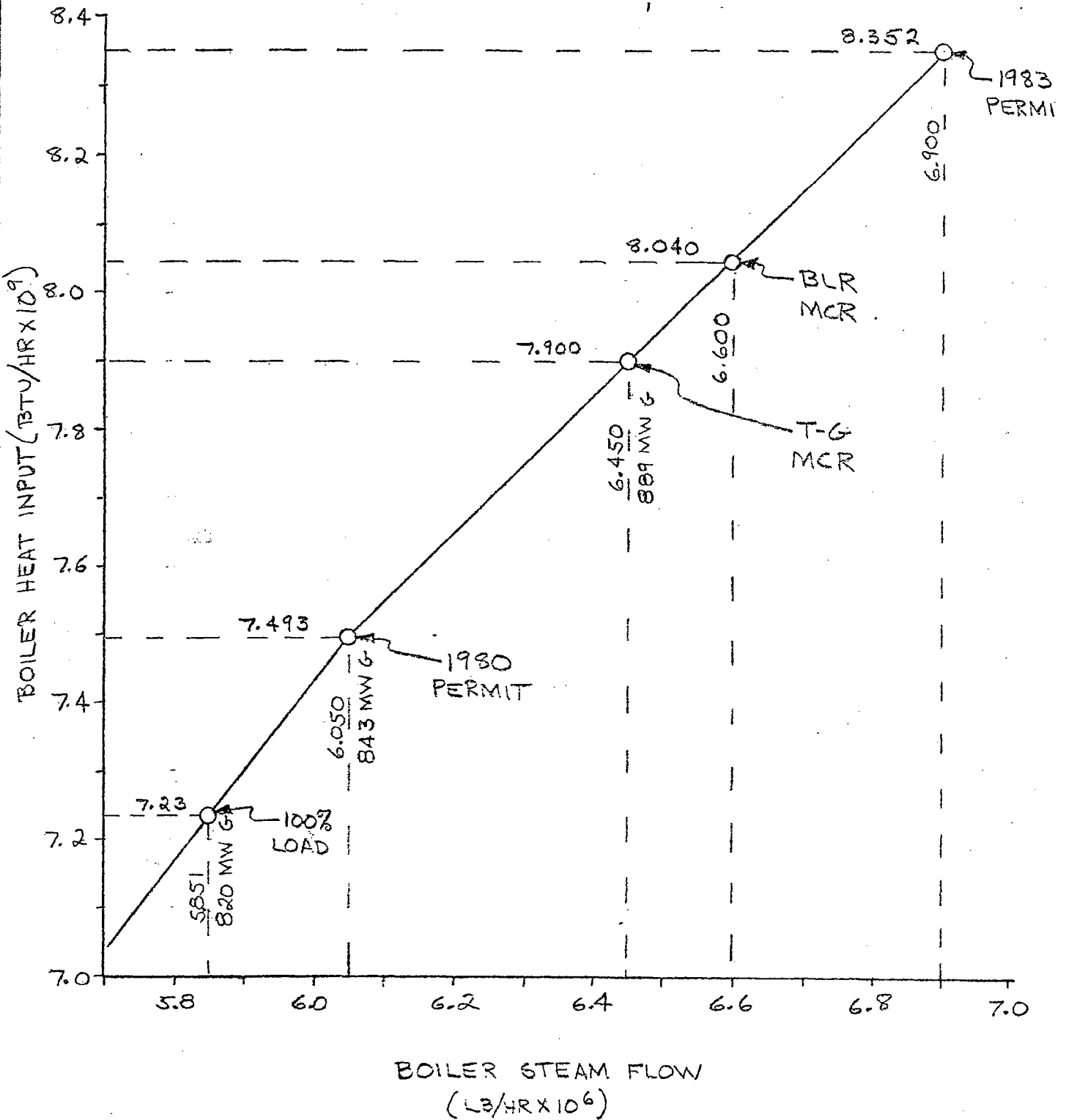
5-9-83

Checked

Approved

REV. 1 5-13-83

CITY OF LOS ANGELES
DEPARTMENT OF WATER & POWER



Meeting with the Utah Department of Health (DOH)
April 29, 1983

A meeting was held on April 29, 1983 among representatives of the Utah DOH, the Utah State Attorney General's Office, the Intermountain Power Project (IPP), the Washington, D.C. law firm of Hunton & Williams and the Utah law firm of Van Cott, Bagley, Cornwall & McCarthy to discuss IPP air quality permit modification issue. Attached is a list of attendees.

Air Quality Control Equipment

The Utah DOH stated the following regarding the air quality control systems proposed for IPP:

- (1) A new limited review of Best Available Control Technology (BACT) will be required by the DOH for sulfur dioxide (SO₂), particulate and oxides of nitrogen (NOx) control systems. This limited review will consider the adequacy of the original BACT analysis, the appropriateness of the original BACT analysis for 1983, and the proposed control equipment changes in the context of existing air quality permit requirements.
- (2) The DOH has reviewed the specifications for the fabric filter systems for IPP and is prepared to recommend that these systems are BACT for particulate control at the existing permit emission limit of 0.02 lbs/MBTU.
- (3) The DOH is currently completing review of the specifications for the limestone scrubber for IPP. Although the DOH has previously approved an application for 95 percent SO₂ removal efficiency as BACT, the DOH will likely approve the proposed IPP scrubber as BACT at 90 percent SO₂ removal efficiency.
- (4) The DOH has made little progress in the limited BACT review of NOx control for IPP. The DOH will require additional information on low NOx burner design and operation in order to evaluate this technology as BACT. The final BACT determination for IPP could range anywhere from existing low NOx burners to selective catalytic reduction (SCR) systems.

In addition, a new permit limit for NOx emissions may be required. (Discussions with DOH staff after the meeting revealed that consideration is being given for a new NOx permit limit of 0.45 lbs/MBTU.)

Status of Construction

At the request of the DOH, a brief update on the status of construction at the IPP site was provided. The DOH responded to this information by stating that the current construction is not valid under the existing air quality permit and that IPP is building a source without proper approval from the DOH. It was emphasized that erection of steel at the site violates Utah state law and that the DOH is authorized to issue a "Cease and Desist Order" to IPP for such violations. However, it appears that the DOH will not issue such an order at the present time unless pressured to do so by environmental groups.

A recommendation was made by IPP representatives for the DOH to consider separate approval orders for SO₂, NOx and particulate control systems, as opposed to a single approval order for all three systems. This could result in immediate approval of the baghouse and scrubber systems which would allow construction of these systems to legally continue while the NOx control issue is being resolved. The DOH appeared somewhat receptive to this recommendation at the meeting; however, it was later learned that the DOH had decided not to issue separate approval orders unless legal action regarding the status of construction at IPP was initiated by environmental groups. At such time, the DOH would likely issue a separate approval order for the baghouse.

Attachment

Attendance - April 29, 1983

Ronald Nelson	IPP Project Office, DWP
Roger Pelote	APERA, DWP
Stephen Clark	APERA, DWP
Reed Searle	Government Relations Manager, IPA
Clark Layton	Director, Federal Government Relations, IPA
James Holtkamp	IPA legal counsel
Henry Nickel	IPA legal counsel
Brent Bradford	Director, Bureau of Air Quality, DOH
Fred Nelson	Utah legal counsel
Monty Keller,	Assistant Director, Bureau of Air Quality, DOH
David Kopta	Staff Engineer, DOH